

CLAIMS

1. An electric discharge machining method comprising the steps of:
setting machining conditions;
obtaining a removal volume (V);
obtaining a removal volume rate (V_m) corresponding to the set machining conditions;
setting machining time (T) based on the removal volume and the removal volume rate;
electric discharge machining a workpiece under the set machining conditions; and
completing electric discharge machining when the set machining time has elapsed from the start of electric discharge machining.
2. The electric discharge machining method according to Claim 1, wherein the removal volume is obtained based on a dimension of the material to be removed (d) and a removal surface area (S).
3. An electric discharge machining method comprising the steps of:
setting machining conditions;
obtaining a removal volume (V);
obtaining a removal volume per single discharge (V_p) corresponding to the set machining conditions;
setting a number of electric discharges (P) based on the removal volume and the removal volume per single discharge;
electric discharge machining a workpiece under the set machining conditions; and
completing electric discharge machining when the set number of discharges have been completed from the start of electric discharge machining.
4. The electric discharge machining method according to Claim 3, wherein the removal volume is obtained based on a dimension of the material to be removed (d) and a removal surface area (S).

5. A sinker electric discharge machining apparatus for machining a workpiece using a tool electrode comprising:

a device for supplying a current pulse having a current peak of 0.2A - 2A and an on-time of 0.5 μ seconds to 5 μ seconds to a gap formed between the tool electrode and the workpiece;

a storage device for storing a database correlating removal volume rate (**V_m**) with machining conditions, and storing removal volume (**V**);

an input device for setting machining conditions;

a calculating device for extracting the removal volume rate corresponding to the set machining conditions from the storage device, and calculating a machining time (**T**) based on the removal volume and the removal volume rate; and

a device for completing electric discharge machining when the machining time (**T**) has elapsed from the start of electric discharge machining.

6. A sinker electric discharge machining apparatus for machining a workpiece using a tool electrode comprising:

a device for supplying a current pulse having a current peak of 0.2A - 2A and an on-time of 0.5 μ seconds to 5 μ seconds to a gap formed between the tool electrode and the workpiece;

a storage device for storing a database correlating removal volume per single discharge (**V_p**) with machining conditions, and storing removal volume (**V**);

an input device for setting machining conditions;

a calculating device for extracting the removal volume per single discharge corresponding to the set machining conditions from the storage device, and calculating a number of electric discharges (**P**) based on the removal volume and the removal volume per single discharge; and

a device for completing electric discharge machining when the number of electric discharges have been completed from the start of electric discharge machining.